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name would seem to indicate; but they are represented by cycads, which have probably been mistaken for them. This island presents unmistakable indications of having risen above its former level in comparatively recent times, and similar indications in other parts of the harbour seem to show that a gradual elevation is taking place; a circumstance which renders it more necessary to preserve the integrity of the harbour from the recklessness and ignorance of the native coolies, who misuse it in the manner previously noticed. Its importance is yearly increasing as a harbour of refuge, as a port of trade, and more particularly as a coaling-station; and its present value may be judged of from the fact that the *Serpent* was one of eight European vessels at anchor there at the same time, the others being Hamburg, Bremen, Prussian, and English ships.

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2.—*On the recent Peruvian Exploration of the Rivers Ucayali, Pachitea, and Palcazu.* By MESSRS. WALLACE and MAIN.\*

(Communicated to Mr. BATES, Assistant-Secretary, by M. LAURENT LETOFFÉ, of Yquitos, Peru.)

PERU has signalised herself during the last fifteen years by an earnest desire to open up to navigation and commerce those rich tracts of territory lying to the east of the Andes and watered by the majestic Amazons and its tributaries. Succeeding Cabinets have vied with each other in their efforts to promote so laudable an undertaking, and not even the distraction of a civil war, followed by a desperate struggle for national independence against foreign aggression, have been sufficient to hinder the prosecution of the enterprise. In the year 1851 the Peruvian Government concluded a treaty with Brazil relative to the navigation of the river Amazons, declaring at the same time her portion of the great river and its tributaries open to the navigation of the world.

Since 1862 the navigation of Peruvian territory has been carried on by their own vessels without intermission, in conjunction with a line of steamers passing from the Brazilian frontier to Pará. In the same year (1862) arrangements were made in England for the construction of a floating dock, and the establishment of a factory, to meet the wants of increased commerce, under the direction of Mr. Daniel Clark, chief engineer and director. Since that time great progress has been made in the province of Loreto, particularly at Yquitos, where the factory is established and the floating dock being built. Instead of little more than a few Indian huts, a large and populous colony is springing up. European labour has been introduced, mechanics of good ability have been secured, and to-day the engineering predominance of Great Britain may be seen as a prime mover in civilisation on the mighty Amazons. We must not omit to notice two small steamers intended specially for the exploration of the smaller rivers that flow into it, named the *Napo* and *Putamayo*, constructed by Messrs. Samuda and Co., with engines, worked at high pressure, by J. Penn and Sons, and despatched to Pará, where they were put together.

With the intention of further perfecting communication between the Atlantic and the interior of Peru, the *Putamayo*, under the orders of Captain Vargus, was despatched from Yquitos, on the 25th of June last, to explore the rivers Ucayali and Pachitea. After having navigated the river Ucayali and entered some sixty miles into the Pachitea, two of the officers, Tavira and West, who wished to open negotiations with the Indians, went on shore, and while in the act of presenting them with beads they were cruelly

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\* Two Englishmen, serving as Engineers on board the Peruvian vessels.

murdered by repeated discharges of arrows. The steamer having got aground and suffered some damage, it was found necessary to return to Yquitos, where another expedition was speedily organised. This consisted of three steamers, the *Morona*, *Napo*, and *Putamayo*, under the orders of the Prefect of the Department, Don Benito Arana, whose flag was hoisted on board the *Morona*, under the command of Lieutenant Eduardo S. Raygada. For the following account of the exploration of these rivers we are indebted to one of the officers who accompanied the expedition on board the *Morona*.

"We entered the Ucayali on the morning of the 15th of November, and anchored at Cedro Isla, 27 miles from its mouth, on the same day; on the 16th we anchored at 1 P.M. at Garça Cocha, 42 miles; on the 17th we arrived at Huanico, 75 miles, and resumed our passage from thence the following day, arriving at 2.45 P.M. at Palisado, where we took in fuel and anchored for the night at Comacera Isla, 32 miles; on the 19th we reached Puiri Isla, 50 miles, where we also took in wood; on the 20th the expedition cast anchor in Punahua, 21 miles; on the 21st we arrived at Cruz-moyona, where we anchored; and on the 22nd we reached Sarayacu, where we remained until the 26th taking in provisions and wood.

"During the eight days we had been navigating the Ucayali we found the average depth of water from 6 to 12 fathoms, with a current of from 2 to 3 miles per hour, so that it is navigable for vessels of great tonnage without risk, the distance run from Nauta being  $356\frac{1}{2}$  miles. On the 26th we left this port, passing a large lake called Cocha Huaya, and at 3.30 we anchored, having steamed this day 54 miles without encountering the least impediment, never being in less than 6 fathoms water. On the 27th we arrived at Cachiboya,  $34\frac{1}{2}$  miles. This village is situated inland 18 miles from the margin of the river, and this night we felt the shocks of two slight earthquakes. We left Cachiboya at 8 A.M. on the 28th, and anchored near the island of Canario, 34 miles, having found this and the previous day from 6 to 7 fathoms. On the 29th we arrived at the creek which leads to the village of Calleria, situated inland some 25 or 30 miles. On the 1st of December we arrived at Puja Hualpa, 33 miles; and on the 2nd, after the celebration of divine service by Padre Calvo, we got under weigh and anchored at the mouth of the Tanvayo, 26 miles, the distance run from Sarayacu up to this point being 250 miles.

"On the 3rd December, at 5 A.M., we continued our voyage, and entered the river Pachitea at 10 A.M., saluting its virgin mountains with 21 guns, casting anchor 3 miles from its junction with the Ucayali in 7 fathoms. Whilst the crews of steamers were cutting wood for fuel, the chief of the expedition, having been informed that some Indians of the Cashibo tribe were living on an island called Sitico, sent a boat, manned by six Conibo Indians whom we had taken on board at Sarayacu, friendly to the whites and constant enemies to the Cashibos, whom they persecute and kill at every favourable opportunity. The Prefect believed that these Cashibo Indians might be acquainted with the place inhabited by the savages who had assassinated the unfortunate officers Tavira and West, and as the sequel proved he was not deceived. When the boat returned she brought two of the above-mentioned Indians from Sitico, who offered to take us to the spot inhabited by the Cashibos Boninaguas. After cutting wood until the 6th, we continued our voyage and anchored 3 miles below Chonta Island, in order that the savages might not be alarmed by the sound of the wheels.

"December 6th, at 4 P.M., the soldiers and attacking party being formed, accompanied by the Indian guides, we were put on shore, and defiled into the woods, where the undergrowth is so thick that it requires in many places, in order to open a road, a long knife which the civilised Indians generally use. After marching until 9 P.M. we halted, and at 4 A.M. the following day, resumed the toilsome march. About the middle of the day we came to several

huts, out of which rushed a number of armed savages, who were immediately shot down, as they attacked the soldiers with their arrows on their sallying from their huts. Those who were not mortally wounded escaped into the bush, where it was impossible to follow them, although the hideous cries too plainly indicated their proximity. In one of the huts we found and took prisoners a number of children and two women, who at the expiration of the deadly conflict which ensued were taken on board the vessel in order to be sent to a convent in Callerio. Outside the huts was a raised platform, on which our unfortunate brother officers had been so cruelly sacrificed to the inhuman appetites of these fiends in human form. One of the captured women, who was raving and foaming at the mouth at the sight of her expiring husband, rushed to one corner of the hut, and bringing some human teeth connected by a small string, dashed them on the ground, saying, 'There are the teeth of the white men.'

"No time was lost in collecting the remains of the dead savages, which were placed within the huts and the latter set fire to, and when they were in full blaze the party commenced the returning march. After we had proceeded a few miles we were suddenly surprised by a flight of arrows falling in the midst of us, which was as speedily returned with a shower of balls, but on account of the denseness of the forest no very accurate aim could be taken; but this combat lasted until we arrived at the river's edge, fortunately without any of our party being mortally wounded, although some were most painfully disabled. The boats were waiting for us at the river's edge, as those on board had been warned by the firing. After all hands had embarked and put off a small distance from the shore, several bodies of savages came howling to the water's edge, shouting in their language, 'Stop until our companions arrive, and we will kill you all;' but they were speedily dispersed by several discharges of grape-shot from one of our cannon.

"On the 8th December we left our anchorage and steamed to the Pascual-ticasca Narrows. On the 9th, although finding from 2 to 4 fathoms, we encountered a terrific current, having run 42 miles since yesterday. The 10th, 11th, and 12th we remained at anchor. The 13th we continued our voyage, conquering the difficulties which we encountered at every step, owing to the channel, which was in places no more than 80 feet broad. At 6 p.m. we anchored in 2 fathoms, having steamed this day 35 miles. On the 14th we left at 10 o'clock, and after having passed the Island of Cebuya, at 6 in the evening we found ourselves in one fathom of water, where we anchored. On the 15th we started at half-past 6, and anchored two hours after. The 16th was occupied in cutting wood. On the 17th we anchored at San Fernando. On the 18th several Cashibo Indians appeared at the river-side, and in their language expressed a desire to be our friends. Taking due precautions, we presented them with some trifling articles, which appeared to please them very much. On the 19th we continued our voyage, anchoring in 5 fathoms of water. As we found an abundance of good wood we continued here until the 25th, when we proceeded on our voyage, passing two creeks called Sungaro-Yacu and Puca. We found from 2 to 3 fathoms of water, and at night we anchored in front of a creek called Samana. On the 26th we had to anchor, not finding more than a fathom and a half; but on the 27th, the river having visibly risen, we passed a creek called Llulla Rehes. At half-past 6 we entered the river Palcazu, anchoring in 4 fathoms of water, and at a short distance from its confluence with the river Piches.

"From the mouth of the Pachitea up to this point we calculated the distance to be 204 miles. The scenery of the Pachitea is beautiful. Its width is variable, with a current of about 6 knots and a strong bottom. Its forests contain many valuable productions; some very easily to be obtained. This river is inhabited by four distinct tribes of Cashibos, and as yet no traveller or merchant has dared to enter amongst them.

“By this time we had navigated as far as it was possible, with a vessel of the tonnage of the *Morona*, and were within two hours’ run of the Port of Mayro, which it was our desire to reach. Not being able to proceed, the two small steamers were despatched with the Prefect and his staff, and in a few hours reached Mayro, where a communication was immediately despatched to the Government announcing the success of the expedition, the time necessary to go to Lima from Mayro being ten days, so that now a direct route exists between the Pacific and Atlantic Oceans.\* It is announced in the periodicals of the Government that they intend to prosecute further the exploration of these important rivers, and are about to order to be constructed steamers expressly for their navigation at all seasons, with all the necessary accommodation for passengers and cargo.

“Having completed the expedition satisfactorily, the boats left for Yquitos, where we arrived on the 16th of February, having been absent three months and four days.”

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\* The distance of Mayro from the mouth of the Amazons is 3623 miles, and from Lima, by road, 325 miles.—[ED.]

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